

# COMPUTATION AND DATA REDUCTION

Systems engineering for the Air Force Ballistic Missile Program requires the extensive utilization of high speed digital computers. Space Technology Laboratories has one of the largest and most advanced computing facilities in the nation, including two large-scale scientific digital computers, a 300- amplifier analog computer, a 30-channel analog-to-digital converter, and a specially designed data reduction center for analysis of telemetry.

The development and solution of equations of missile electronics, structural analysis and system or equipment simulation provide opportunities for project responsibility and personal recognition. Several positions are now available for individuals with degrees in mathematics, engineering, or physics and an interest in mathematical analysis, computer programming, or mechanical data handling.

Inquiries regarding these openings are invited.

## SPACE TECHNOLOGY LABORATORIES

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### Letters

#### Mendeliana

I should like to comment on the news paragraph headed "Mendeliana" [Science 127, 77 (1958)]. The facts are that the monastery in Brno, Czechoslovakia, where Mendel lived and where the museum was, got a direct hit in the Allied bombing in 1945 and a good many Mendeliana were destroyed. However, when I visited Brno in 1947, they were rebuilding the monastery and had a temporary exhibition of Mendeliana. The implication that the Czechs were not interested in preserving records of Mendel is quite false, even though in 1947 (not now) Mendel-Morganism was definitely frowned upon.

When I was in Brno I was on my own and was fortunate in finding an Englishspeaking curator at the folk museum who took me to the Mendel museum. I quote what I actually wrote in my diary at the time: "An Augustine monk who spoke no English met us and shewed us round. I was terribly disappointed to find that Mendel's experimental plot was now a rather unkempt flower garden, with a monument commemorating his birth centenary, 1822-1922 (inscribed in English as well as other languages). The priest shewed us some beans growing on a rubbish dump which he said were direct descendents of Mendel's beans! . . . I was intrigued [in the museum] by Mendel's bed (he died on his settee while sitting up)—a lovely walnut one, with side pieces like Norwegian beds. Hank [the folk museum curator] had never seen a bed with side pieces before. It did not look the kind of hard bed you would expect of a monk. He [Mendel] was not a very good plant presser" (this referred to the very poorly pressed herbarium of Mendel's which was on display with, so far as I can remember now-I haven't recorded itsome magnifying lens or simple microscope).

It is 11 years already since I was there; the whole of Brno still had a very bombed look, and I do not think Mendeliana were any more neglected than anything else at that time. It must be remembered that Brno was a very German town and was going through a difficult period. Another English biologist, who visited Brno in 1954, tells me that when she went, she found the monastery now closed (I believe that there were only eight monks when I was there) and the Mendeliana housed in a special museum. I hope that someone from the University of Illinois will find the opportunity to make contact with whosoever is in charge of the Mendel Museum in Brno.

Amicia M. Young

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#### Sex Determination

A recent paper by M. J. Gordon [Proc. Natl. Acad. Sci. U.S. 43, 913 (1957)], mentioned in "News of Science" [Science 126, 1059 (1957)] puts forward a claim of success in separating the two kinds of sperm, reporting data for 31 litters of rabbits. These data contain a peculiar heterogeneity which should be noticed. In all cases, sexing involved examination of the gonads; for the last 13 litters the accessory organs also were examined. The results for these last 13 litters differ from the first 18, with respect to the difference between sex ratios when males were expected and when females were expected, being statistically significant beyond the level of 1 in 1000. Among the last 13 litters there is obviously no significant effect of electrophoresis, the sex ratios being 17 males to 22 females when males were expected and 16 males to 29 females when females were expected (nor is this changed by excluding the three litters for which "incorrect technique was suspected. . . .").

No explanation of this difference which is compatible with all the reported circumstances suggests itself. For the time being, therefore, three possibilities appear equally admissible: (i) electrophoresis is ineffective, but accidents of sampling or unknown factors produced a strong appearance of effect in the first 18 litters; (ii) electrophoresis is effective, but accidents of sampling almost totally obscured the effect in the last 13 litters; or (iii) electrophoresis is effective in some circumstances not yet defined. Obviously it is premature to select one of these three rather than another.

Any a posteriori analysis of data will raise in some minds the question of whether the tests of significance performed, and, more important, those reported, were suggested by the data themselves and, hence, whether the significance levels are misleading. My approach was really a priori in that I sought heterogeneity at each change of technique, and I mention in passing that changing after 8 litters to "blind" sexing for the next 10 litters did not alter the difference observed between the two sex ratios

H. W. Norton

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#### Founder of Hydrographic Office

It is not correct to state, as Hugh Odishaw does [Science 127, 124 (1958)] that Matthew F. Maury was "the founder of the U.S. Navy Hydrographic Office." Strictly speaking, the Hydrographic Office was established by Act of Congress of 21 June 1866 (14 Stat. L. 69), and its

first head was Commander T. S. Fillebrown, U.S.N. Maury had left the Federal for the Confederate Navy in 1861, before the creation of the Bureau of Navigation, whose founder, Rear Admiral Charles H. Davis, U.S.N., was probably the instigator of the movement for a Hydrographic Office.

In a wider sense, the Hydrographic Office started in 1830 with the establishment of the Navy's Depot of Charts and Instruments, since the depot was split in 1866 into the Hydrographic Office and the Naval Observatory. It is not correct to speak of Maury as "the founder of the Naval Depot of Charts," as do A. Joseph Wraight and Captain Elliott B. Roberts of the U.S. Coast and Geodetic Survey [The Coast and Geodetic Survey 1807-1957 (U. S. Government Printing Office, Washington, D.C., 1957), p. 22]. The depot's founder and first head was Lieutenant Louis M. Goldsborough, U.S.N. His successors (all of the same rank) were Charles Wilkes, James M. Gilliss, and Matthew F. Maury. Upon Maury's departure in 1861, he was succeeded by Gilliss.

Maury was unquestionably the best known as head of the depot, and these remarks are intended not to depreciate his deservedly outstanding reputation but to correct recent mistakes in the historical record, mistakes whose currency might lead to the distortion of accomplishments too noteworthy to need enlargement.

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As authors of The Coast and Geodetic Survey, 1807-1957, we are glad to acknowledge the factual accuracy of the statements made in Harold L. Burstyn's letter. We would like to point out, however, that our publication is a brief review, intended to convey general ideas without pretentions of definitive accuracy. The reference to M. F. Maury was based upon the officially recognized facts that he was the first officer of the Depot of Charts and Instruments to engage in the scientific study of physical oceanography, including winds, weather, and currents, and the first to engage the collaboration of ship masters in assembling data important in navigation. He, in fact, fathered the basic ideas upon which the U.S. Navy Hydrographic Office was developed. Our statement, therefore, seems to us correct in its significance though not literally true.

> A. J. Wraight E. B. Roberts

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## Meetings

#### **Geochemical Society**

The Geochemical Society was organized at a meeting in New Orleans in November 1955, for the purpose, as stated in its constitution, of "encouraging the application of chemistry to the solution of geological and cosmological problems." Its membership is international, at the present time including more than 1500 members from 50 different countries. Membership is open to anyone who will subscribe to the purpose of the society and who has either (i) training equivalent to at least a bachelor's degree in physical science, biological science, mathematics, or engineering or (ii) three years' experience in any one of these disciplines. The membership roll includes, besides geochemists, representatives from a wide variety of fields, ranging from astrophysics to ceramics, oceanography, and paleontology.

Annual meetings are held, whenever practicable, at the same time and place as the meetings of the Geological Society of America. Additional meetings, in the United States or elsewhere, may be called by the council of the society. For example, the society held a joint session with the Commission on Geochemistry of the International Union of Pure and Applied Chemistry, in Paris, in July 1957.

The Geochemical Society is affiliated with many scientific organizations throughout the world; its most recent affiliation is with the American Association for the Advancement of Science. It is a member of the American Geological Institute and of the Division of Chemistry and Chemical Technology and the Division of Earth Sciences of the National Research Council.

The official publication of the society is Geochimica et Cosmochimica Acta, published by the Pergamon Press; members of the society are eligible to receive this journal at the special price of \$10.00 per year. A newsletter, Geochemical News, is published bimonthly by the society.

A current project of the society is the translation of the Russian journal Geokhimiya, an undertaking to be subsidized by a grant from the National Science Foundation. If this project is successful, translations of other Russian journals and books on geochemistry will be undertaken. Other current activities include efforts to improve and broaden education in geochemistry and to encourage geochemical investigations through a research committee. The society hopes ultimately to be able to further geochemical research by awards and grantsin-aid and to set up standards for analytical work on geochemical problems.

As an active organization representing

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